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EVALUATIONS OF SOVIET
SURFACE-TO-SURFACE
MISSILE DEPLOYMENT
18TH REVISION

A Report of the Deployment Working Group
of the
Guided Missile and Astronautics Intelligence Committee



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PREFACE

This report, published bimonthly by the GMAIC Deployment Working Group (DWG), provides a comprehensive, ready-reference listing of all ICBM, IRBM, and MRBM deployment locations, types of site configurations, photographic references, estimated construction and operational status, and other evaluations by the DWG. These data constitute the majority view of the DWG membership, and may not correspond precisely to individual assessments by each member. Additional data may be added to future revisions.

Dissemination of the report was previously limited to holders of the DWG report, Soviet Surface-to-Surface Missile Deployment. Because the information contained herein is both supplemental and self-sustaining, distribution will no longer be limited to holders of the above report.

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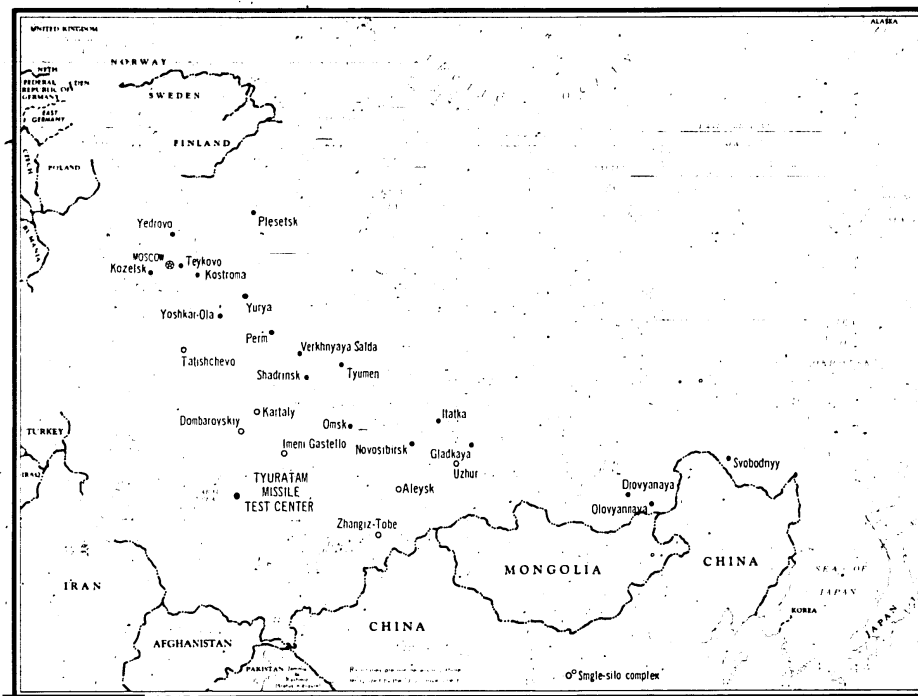


FIGURE 1. DEPLOYMENT OF SOVIET ICBM COMPLEXES.

This report is the 18th Revision of Evaluations of Soviet Surface-to-Surface Missile Deployment prepared by the Deployment Working Group (DWG) of the Guided Missile and Astronautics Intelligence Committee (GMAIC). While information contained in this and previous revisions is self-sustaining, it serves to supplement the basic DWG report Soviet Surface-to-Surface Missile Deployment, which provides detailed information on individual launch facilities of the Soviet Strategic Rocket Forces. The basic report, dated 1 January 1962 (Control [redacted] has been revised and updated on a periodic basis. Further updating is accomplished in reports prepared and published for GMAIC by the National Photographic Interpretation Center.

sis of previous missions and other sources have provided additional information on the Soviet strategic ballistic missile deployment program. The new data are reflected in Table 1 and in the estimated operational status shown in Tables 2 through 6. Technical characteristics of Soviet ICBM, IRBM, and MRBM systems currently operational or under development are given in Table 10. Cutoff date for information contained in this report is 20 April 1965.

SOVIET ICBM DEPLOYMENT

Significant developments in the Soviet ICBM deployment program since publication of our 17th Revision is limited to identification of additional single-silo sites under construction at deployed complexes and at the Tyuratam Missile Test Center.

CURRENT DEPLOYMENT

The number of identified ICBM complexes remains at 25. These complexes now contain a total of 341 confirmed and probable launchers in various stages of construction, an increase of 18 over the number reported in our 17th Revision. Of these 341 launchers, 150 are soft and 191 are hard. Included in the hard launchers are 113 single silos. In addition, we are carrying 14 additional single-silo sites in the possible category. See Figure 1 for locations of deployed ICBM complexes.

Of the 341 confirmed and probable launchers, 224 are estimated to be operational, including 78 in a hard configuration. In addition, we believe that 26 of the 46 launchers at Tyuratam are operational, although not normally considered as part of the operational ICBM force. The ICBM sites have been designated by type, as shown and explained in Figure 2.

Evaluation of all evidence received since our last revision has resulted in the following additions at the complexes indicated, and at Tyuratam:

DROVYANAYA, Launch Group H(19-21),
Type IIID, under construction
GLADKAYA, Possible Launch Group G,
Type IIID, under construction
IMENI GASTELLO, Launch Site G(7), Type
IIIC, under construction
KARTALY, Launch Sites G(7) and H(8),
Type IIIC, under construction
TATISHCHEVO, Probable Launch Group C
(25-29), Type IIID, under construction
UZHUR, Launch Sites I(9), J(10), and
Possible Launch Site K(F1), Type IIIC,
under construction
TYURATAM, Launch Group L(21-30), Type
III, under construction.

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SINGLE-SILO DEPLOYMENT

General

We have now confirmed single-silo deployment at 7 new and 4 of the older ICBM complexes. In addition, a fifth older complex is currently suspect for deployment of a single-silo configuration. It is apparent that deployment of both the Type IIIC and IIID sites is continuing. We still are unable to firmly identify the missile system(s) to be employed in either.

Type IIIC Sites

GENERAL

Identified deployment of Type IIIC sites continues to be limited to the Aleysk, Dombarovskiy, Imeni Gastello, Kartaly, Uzhur, and Zhangiz-Tobe Complexes, where a total of 41 confirmed and probable sites have been observed. In addition, 2 areas of activity at Uzhur are currently assessed as possible Type IIIC launch sites in a very early stage of construction.

Total sites at the IIIC complexes range from a low of 5 at Dombarovskiy, which has not been covered by good [] photography since

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[] to a high of 11 (including 2 possible) at Uzhur. It appears plausible that eventually each complex will contain at least 12 sites, or 4 groups of 3 each, if our assessment of groupings of 3 is correct (see 17th Revision). Identification of additional possible control facilities under construction at Aleysk Launch Site F(6), Imeni Gastello Launch Site C(3), and Uzhur Launch Site F(6) on Mission

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[] add credibility to the "troika" deployment-pattern judgment (see 17th Revision), since probable control facilities have already been identified at 1 of the 6 original sites at each of these complexes. We have no new evidence which changes the tenuous site groupings within each complex postulated in our 17th Revision.

None of these identified Type IIIC sites at deployed complexes has yet progressed beyond the midstage of construction,* although backfilling may have begun at a few. We continue to believe that the minimum completion time for each group of 3 sites will be 21 to 24 months. Succeeding paragraphs summarize developments since our last revision at the 6 complexes where Type IIIC sites are currently under construction.

ALEYSK COMPLEX

Useable photography of the Aleysk Complex was obtained only on []

[] All 6 sites remain in a midstage of construction, but details are obscured by snow cover. The most significant development is the identification of earth scarring approximately 300 feet southwest of the silo excavation at Launch Site F(6), a location which renders this activity suspect for construction of a control bunker. If and when confirmed, this would be the second facility associated with control at the 6 sites. A probable control bunker has been identified previously at Launch Site C(3). Both these sites have security fencelines large enough to accommodate an interferometer, though none can be identified yet.

DOMBAROVSKIY COMPLEX

The Dombarovskiy Complex was covered by

[] but heavy snow precludes

*To clarify the terms used in referring to construction stages at single-silo sites, identifiable steps in the construction process have been categorized as follows: early stage, clearing and grading, open-cut silo excavation, silo coring; midstage, silo under construction, silo backfilling; late stage, silo door installed, final backfill and grading; complete, final configuration apparent; operational, equipment installed and checked out (estimated).

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assessment of details on the latter mission. Launch Site A(4) remains in a midstage of construction, although backfilling may have begun. Launch Site B(3) is also in midstage. A row of probable footings extends several hundred feet north from the probable control facility under construction east of the silo (Figure 3). This activity probably represents construction of an L-shaped guidance facility (interferometer) similar to those identified at Launch Complex I(14) and Launch Site G7(18) at Tyuratam. Launch Sites C(2), D(1), and E(6) show little change over previous coverage, with C(2) and D(1) at midstage, and E(6) still early.

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IMENI GASTELLO COMPLEX

[REDACTED]
covered the Imeni Gastello Complex, but only the earliest mission provides good quality coverage. All 6 of the launch sites previously identified are in a midstage of construction, although Launch Sites A(1) and E(5) are partly backfilled. A probable control facility is under construction at Launch Site D(4), where the security fence is large enough to enclose an interferometer. At Launch Site C(3), a new excavation containing a possible unidentified object adjacent to the southeast side of the silo is a candidate for a second control facility (Figure 4).

A new launch site, designated G(7), is identified on [REDACTED] (Figure 5). This site can be negated in [REDACTED] and represents the initial construction of a third group of sites at this complex.

A unique development is occurring at all 7 sites at Imeni Gastello. It is unique in that similar construction activity cannot be identified at Type III C sites at the other 5 deployed

complexes, or at the prototype sites at Tyuratam. This activity consists of a plus-shaped configuration defined by areas of ground scarring. At Launch Sites C(3) and G(7), apparently the farthest advanced in this respect, small unidentified objects are on each segment of the plus configuration (Figure 6). Lines projected between opposite pairs of objects intersect at the silo structure. The signature and measurement of the plus configuration formed by the inner objects on each segment suggest a similarity to the crossed baseline guidance facility at Type IIIB sites (Figure 7). We cannot determine the significance of this construction activity at the present time. A schematic layout of the Imeni Gastello Complex is shown in Figure 8.

KARTALY COMPLEX

The Kartaly Complex was covered by good quality photography on [REDACTED]

Highlight of the coverage is the identification of 2 new Type III C launch sites in an early stage of construction on [REDACTED] apparently the start of a third launch group (Figure 9). Launch Site G(7), located approximately 8 nm northeast of the complex support facility can be negated on [REDACTED] in [REDACTED] and is first visible on Mission [REDACTED]. Launch Site H(8) can be negated on [REDACTED] and is first visible [REDACTED]

Launch Sites A through F (1-6) are all in a midstage of construction, and a probable control facility can be identified at Launch Site A(1). A rail-to-road transfer point (Figure 10) is confirmed near the terminus of a rail spur approximately 1.5 nm southwest of the complex support facility. A schematic layout of the Kartaly Complex is shown in Figure 11.

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UZHUR COMPLEX

[redacted] provided partial coverage of the Uzhur Complex. Launch Site G(7), previously carried in the possible category, can be confirmed on this photography; newly identified are 2 confirmed and 1 possible Type IIIC launch sites, designated Launch Sites I(9), J(10), and Possible Launch Site K(11), respectively (Figure 12). Possible Launch Site H(8), first seen on Mission [redacted] remains in the possible category pending identification of a silo excavation.

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Launch Site I(9) can be negated in [redacted]

[redacted] Like Launch Sites G(7) and possible H(8), it is in an early stage of construction. These 3 sites were begun in the same time period, and probably will form a launch group. Launch Site J(10) and Possible Launch Site K(11) can both be negated on [redacted] and are first visible on [redacted]. They probably will be allied with a third site, not yet identified, to form a fourth launch group at this complex.

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Of the 6 original sites, only Launch Sites B(2), E(5), and F(6) have been covered by photography since our last revision. At Launch Site B(2), construction continues on the L-shaped electronic facility and probable control bunker, but poor image quality on Mission [redacted] prevents detailed interpretation. At Launch Site E(5), a loop road now passes to the north of the silo and approaches it from the west. The construction ramp still extends to the silo structure. At Launch Site F(6), the silo appears to be approaching ground level. Ground scarring 500 to 600 feet south of the silo excavation is assessed as the start of a possible control facility, the second instance of such activity identified at the 6 original

launch sites. A schematic layout of the Uzhur Complex is shown in Figure 13.

ZHANGIZ-TOBE COMPLEX

The Zhangiz-Tobe Complex was partially covered by [redacted]. Launch Sites A(1), B(2), and C(3) remain in a midstage of construction, with ramps extending out to all 3 silo structures. Launch Sites D(4) and E(5) are identified only. Probable Launch Site F(6) is in an early construction stage, with possibly the early stages of an excavation visible. The site support area contains 3 buildings.

Type IIID Sites

GENERAL

We have identified a total of 84 confirmed, probable, and possible Type IIID launch sites at 1 new (Tatishchevo) and 4 of the 18 older ICBM complexes (Drovyannaya, Gladkaya, Olovyannaya and Perm). The older complexes were all associated previously with the SS-7 missile system. We are still unable to determine the system to be employed in the Type IIID silos.

The number of confirmed and probable launch groups of this configuration now stands at 9, an increase of 3 over the figure reported in our 17th Revision. This increase is based on the identification of additional launch groups at Drovyannaya and Tatishchevo, and deployment of 1 new group of this configuration at Perm. Since we believe that each Type IIID launch group will ultimately contain 10 launch silos (see 17th Revision), the total count of launchers under construction, or soon to be started, at these 9 groups is 90. In addition, we are carrying a second launch group at Gladkaya in the possible category and activity at Perm is suspect.

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for deployment of still another Type III D group.

Construction of individual sites at identified launch groups ranges from early to late stages. We do not believe, however, that all of the sites at any 1 launch group have reached a late construction stage. We have no reason, as yet, to modify our previous estimate that a minimum of 18 to 21 months will be required for each launch group to reach an operational status.

Succeeding paragraphs summarize developments since our last revision at complexes where deployment of Type III D launch groups has been identified.

DROVYANNAYA COMPLEX

25X1D Good quality coverage of the Drovyanaya Complex on [redacted]

25X1D [redacted] resulted in the identification of additional Type III D launch sites, bringing the total at this complex to 14 confirmed and probable, and 1 possible, launch silos (Figure 14). The number of silos identified and the geographic pattern of the sites indicate that 2 separate launch groups, designated G and H, are under construction. We cannot, however, determine with confidence the specific sites comprising each launch group. Therefore, the sites have been designated G1(7) through G16(21), excluding G10 which has been dropped, pending further coverage and analysis.

All of the 14 confirmed and probable sites are in a midstage of construction and activity at Launch Sites G2(8) and G13(17) indicates that these sites will contain the guidance, control, and support facilities for the 2 respective launch groups.

GLADKAYA COMPLEX

Launch Group F(7-13), consisting of 5

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confirmed and probable and 4 possible launch silos, could be viewed for identification only on [redacted]

This same coverage, however, revealed a possible second group, designated Possible Launch Group G, approximately 12 to 18 nm west-northwest of the complex support facility (Figure 15). The new activity consists of 3 possible launch sites in a very early stage of construction and 5 additional areas of unidentified activity. Possible Launch Site G1 can be negated on Mis-

[redacted] and is first visible on [redacted]

Possible Launch Sites G2 and G3 can both be negated on [redacted]

and are first identifiable on [redacted]

OLOVYANNAYA COMPLEX

Coverage of Launch Groups D(4-13) and E(14-23) at Olovyanaya was accomplished on all missions since our last revision. No significant changes are discernible at Launch Group D(4-13), which contains 10 confirmed launch sites. This launch group remains generally in a midstage of construction, although several individual sites are in a late stage. Six of the sites have small excavations near the silos, probably to provide access to the silo structure. Launch Group E(14-23) is in a mid-stage of construction and now contains 10 confirmed launch sites.

PERM COMPLEX

Launch Group U(7-17), reported as possible in the 17th Revision, can be confirmed as a Type III M launch group on [redacted]

[redacted] Evaluation of the 8 confirmed and

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probable sites, and 1 possible site, indicates a similarity to those deployed at other Type IIID launch groups, although neither the circular pattern nor a support/control facility can be identified on the non-stereo photography with scattered clouds and haze. In view of the fact that the eastern and westernmost sites are 15 nm apart, it is possible that these sites may be part of at least 2 launch groups; the usual circular pattern may be apparent when additional sites are identified. Re-evaluation of available photography indicates that construction of the identified sites began in the [redacted] time period. All but one can be negated on Mis- [redacted] and the earliest are first visible on [redacted]. Some may be in a late stage of construction. Pending further coverage, we are carrying these sites as a single launch group.

TATISHCHEVO COMPLEX

[redacted] revealed further evidence that a third launch group is under construction west of Probable Launch Group B(12-21) at the Tatishchevo Complex, and we have designated it Probable Launch Group C(25-29). This group (Figure 16) currently consists of 5 probable and 1 possible launch sites. In addition, 3 other areas are suspect launch sites in an early stage of construction. This activity can be negated on [redacted] and is first visible on [redacted]. The group is in an early construction stage.

Launch Group A(1-11) contains 10 confirmed single silos and is probably nearing a late stage of construction. Snow cover prevents detailed interpretation of some of the sites, but Launch Sites A1(1), A3(3), and A6(6) have been backfilled and have square structures covering them. We cannot determine whether these covers

are silo doors or temporary environmental shelters. A schematic layout of Launch Group A(1-11) is shown in Figure 17.

Launch Group B(12-21) remains in the probable category; all 10 probable sites show activity in the snow in the vicinity of an excavation, and security fences can be identified at all but 2 of the sites.

OTHER ACTIVITY AT DEPLOYED COMPLEXES

General

[redacted] coverage of the 18 older ICBM complexes since our last revision continues to confirm our previous judgment that there is no evidence of phaseout or retrofit of launch sites associated with first and second generation missile systems (SS-6, SS-7, and SS-8).

Significant developments are summarized in succeeding paragraphs.

Kozelsk Complex

[redacted] revealed several areas of new activity in the vicinity of the Kozelsk Complex. The most prominent of these areas is located about 14 nm south-southwest of the complex support facility (Figure 18). It consists of 2 separate areas of ground scarring, 1 Y-shaped, and the other a plus configuration. This activity can be negated on [redacted] and is first visible on [redacted].

Adjacent to the ground scarring are 2 large multistory buildings and a third under construction. First evidence of these buildings was on [redacted].

Two other areas of track activity and ground scarring are located, respectively, 18 nm south-southwest and 5.5 nm west-southwest of the complex support facility. First evidence of activity at these areas is identifiable on [redacted].

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Novosibirsk Complex

[redacted] confirmed that Launch Site C(3) at Novosibirsk is complete (Figure 19). Our estimate that all Type IIIA sites are complete and operational is now confirmed on [redacted] photography.

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Olovyannaya Complex

Coverage of the L-shaped ground scar at Olovyannaya Launch Site C(3) since our last revision reveals no significant change on snow-covered photography. There is still no evidence that such a facility is under construction at any other Type IIIA launch site.

25X1D Plesetsk Complex 25X1D

[redacted] provided additional information on construction activity at the Plesetsk Complex. Significant developments are the identification of 2 new areas of unidentified construction activity and relatively detailed coverage of Launch Site F and Probable Launch Sites G(9) and H(10).

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An area of unidentified activity, suspect for a new launch site, is newly identified on Mission [redacted] approximately 20 nm east of the complex support facility. It is served by the road extending eastward about 15 nm beyond Probable Launch Site H(10). The area (Figure 20) contains 3 buildings and ground scarring. This

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activity is new since [redacted]

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The access road has well-engineered, wide-radius turns. Two unimproved roads/trails extend north from the access road to a possible power trace. A support-type area is immediately across the access road, south of the area of unidentified activity. It contains approximately 20 buildings, including 6 probable barracks.

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A second area of unidentified activity is newly identified on [redacted] 2 nm west-southwest of the complex support facility. This area consists of ground scarring, track activity, and possible building or structure footings (Figure 21). The area can be negated on [redacted]. The location and nature of this activity indicate that it is not intended as a launch facility.

[redacted] provides the basis for a detailed analysis of Launch Site F, a unique 2-pad soft launch facility which resembles Launch Site 5C1 at the Kapustin Yar Missile Test Center rather than any known ICBM site. A line drawing and an artist's concept of this facility are shown in Figure 22. The launch pads are approximately 90 feet wide, 645 feet apart (center-to-center), and oriented generally east and west. There is a probable canvas-covered launcher/erector on the right (south) pad. The left pad contains a small unidentified object near the center. There is a building approximately 105 by 40 feet inboard of each pad, and a linear revetment between each pad and its associated building. There is vehicular access to the inboard side of each building, but no entrances can be identified. There are 2 buildings in line and centered between the pads, 1 approximately 100 by 40 feet and the other about 30 feet square. The larger building is accessible by road, but no entrance can be identified; a probable ditch connects the smaller building with each launch pad. There are 2 probable earth-mounded bunkers and a small building on the west side of the loop road system. A probable missile-ready building, 135 by 35 feet, and 4 smaller structures are located in the southwest part of the launch site. At least 15 vehicles/pieces of equipment are parked on an apron in the southeast portion of the launch site. They range from 40 to 100 feet in length. We are still

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unable to determine the purpose of this launch facility, but continue to believe that it is not an operational ICBM site.

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[redacted] provide further details of construction activity at the probable rail-served soft sites designated Probable Launch Sites G(9) and H(10). Both are currently in a midstage of construction (Figures 23 and 24). The pad area(s) cannot be defined, but we continue to believe that each site will ultimately contain 2 pads. We cannot equate these probable launch sites to any prototype at Tyuratam. In an earlier revision we pointed out certain similarities between the configuration of these sites and an area of construction activity at Tyuratam, Launch Complex B (Figure 25). Continued analysis of construction progress at Complex B indicates that it is not related to the sites at Plesetsk.

TYURATAM MISSILE TEST CENTER Test Range Facilities

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The Tyuratam Missile Test Center (Figure 26) was covered by [redacted]

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[redacted] and [redacted] Highlight of the coverage is the identification of a new launch group (Figure 27), composed of 10 single silos in a midstage of construction and designated Launch Group L (21-30).

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The new launch group is located at the west end of the rangehead, in the vicinity of Launch Complexes F, G, and K. It can be negated on [redacted]

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and first evidence of construction activity is visible on [redacted]

The launch group configuration is similar to those at Olovyannaya and Tatishevo, with 6 sites in a circular pattern around a central site, and 3 additional silos forming a segment of an outer circle. The center site, L(21), has

a control facility and an L-shaped interferometer under construction. The silo structures appear to be circular and similar to the Type III D sites. We are awaiting further photographic coverage, however, before firmly identifying these silos as to type.

At Launch Complex A, Launch Site A3 (15) has progressed to a late stage of construction, with the silo completely backfilled. No significant change or activity can be observed at Launch Sites A1(1) or A2.

The silo at Launch Site B2(10) has been backfilled, and the site is in a late stage of construction. No significant activity is visible at Launch Sites B1(2) and B3(17).

[redacted] reveals a probable missile, approximately 105 feet in length, erected on Pad C1 (Figure 28) at Launch Complex C(3). In addition, a possible missile transporter is aligned with the launcher/erector on Pad C3; their overall length is about 180 feet.

No significant change or activity is identifiable at Launch Complexes D(4,9), E(6), and F(5) and Launch Sites G1/G2(7), G3/G4(11), G5/G6(12) and G8/G9(19). At Launch Site G7(18), neither the silo nor the probable control building at the intersection of the segments of the L-shaped electronic facility are backfilled. The ditching from Launch Site K1/K2(13) now terminates at the probable control building.

[redacted] shows a probable missile dolly, approximately 105 feet long, on the rail serving Pad H1 (Figure 29) at Launch Complex H(8). Two small earth-mounded buildings with a road-served hardstand between them have been constructed at a point approximately 300 feet south-southwest of Pad H1. First evidence of this construction was observed on [redacted]

At Launch Complex I(14), the silo is backfilled and backfilling is in progress at the prob-

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able control facility located at the junction of the segments of the L-shaped interferometer. A new ditch extends from a point just west of the silo to the west fence line.

At Launch Complex J (Figure 30), the high bay of the large building is approximately 75 percent roofed. The rail embankment parallel to the main road has been extended approximately 0.5 nm, and curves north-northeast in the general direction of the probable launch area to its present terminus. There are 3 additional shallow rectangular excavations in the area of construction activity approximately 400 feet northwest of the large excavation at the probable launch area. The road connecting Launch Complexes A and J is now complete.

Neither silo at Launch Site K1 K2(13) appears to be up to ground level (Figure 31). The ditch from Launch Site G7(18) crosses the access road serving K2 and terminates at a small unidentified structure near K1. At Launch Site K3(20), open excavations continue to be visible in the vicinity of the silo and the probable control building. Details of the nature of the operation in progress cannot be determined, nor can it be ascertained if the silo is intact or undergoing modification.

An H shaped building approximately 360 by 140 feet overall can be identified on Mission [] in the area of unidentified construction activity [] west of Launch Complex G (Figure 32). The center bay of the "H" approximately 70 by 80 feet, is approximately 3 times as high as the other 2 parts of the build-

ing. There are at least 5 smaller buildings and an excavation in the area.

[] revealed new and similar construction activity at both Tyuratam and the Kapustin Yar Missile Test Center (Figure 33). At Tyuratam the activity is located 1.5 nm southwest of the propellant production plant. It can be negated on Mission

[] first visible on At Kapustin Yar, this construction activity is located approximately 0.5 nm north of the former rocket launch complex. In general, this activity at each range consists of a geometric configuration of excavations, ditches, and scars which is suggestive of an electronic facility under construction.

Test Range Activity

25X1D

ICBM firing activity accelerated during the period [] with a total of 7 successful firings from Tyuratam to the Klyuchi Impact Area on Kamchatka. ICBM operations were canceled on [] SS-7 firings were identified []

25X1D

[] SS-8 firings were accomplished on [] The highlight of this activity, however, was the successful launch of what appears to be a new ICBM and/or space vehicle on [] Film film tracking data indicates that the new vehicle may have been launched from Launch Site G5 G6 at Tyuratam. If so, it represents the first successful launch from this facility.

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25X9

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K1

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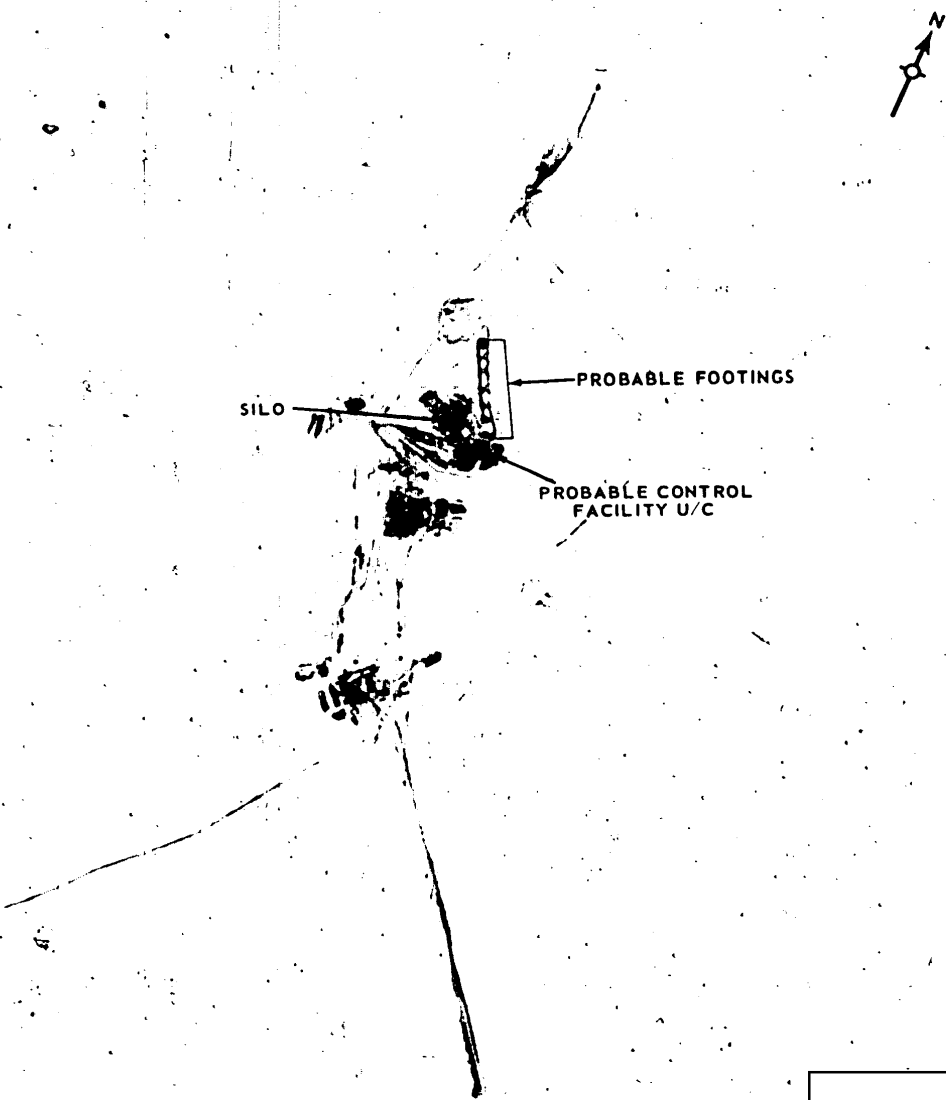


FIGURE 3. LAUNCH SITE B-31, DOMBAROVSKIY ICBM COMPLEX.

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SILO

POSSIBLE
UI OBJECT

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FIGURE 4. POSSIBLE CONTROL FACILITY UNDER CONSTRUCTION, LAUNCH SITE C(3), IMENI GASTELLO ICBM COMPLEX.



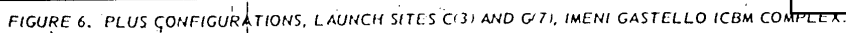
LAUNCH SITE

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FIGURE 5. LAUNCH SITE G(7), IMENI GASTELLO ICBM COMPLEX.

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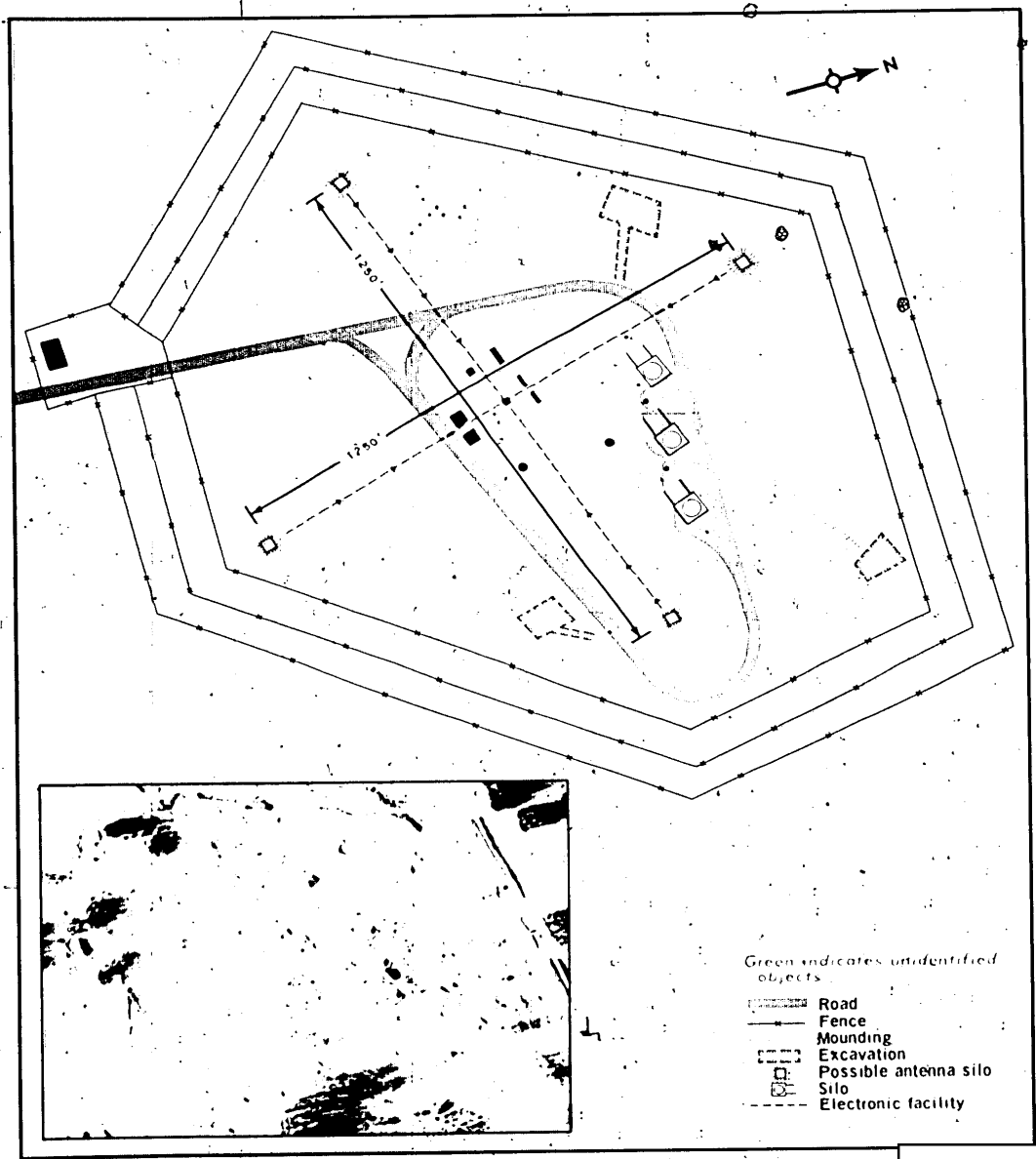


FIGURE 7. ELECTRONIC FACILITY AT TYPE III B ICBM LAUNCH SITE (LAUNCH SITE A1), OMSK ICBM COMPLEX.

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FIGURE 9. LAUNCH SITES G(7) AND H(8), KARTALY ICBM COMPLEX.

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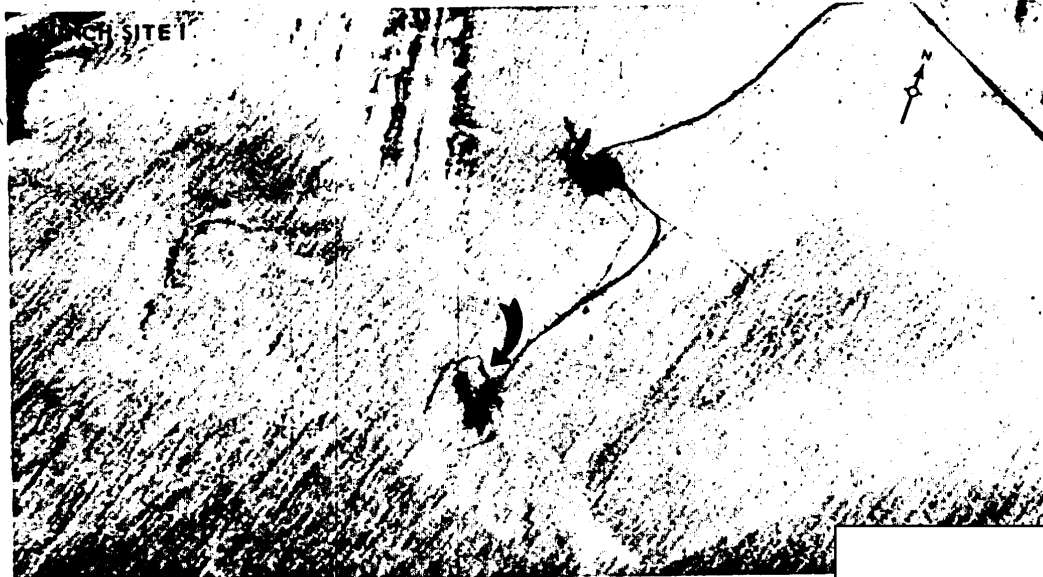


FIGURE 10. RAIL-TO-ROAD TRANSFER POINT, KARTALY ICBM COMPLEX.

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LAUNCH SITE J

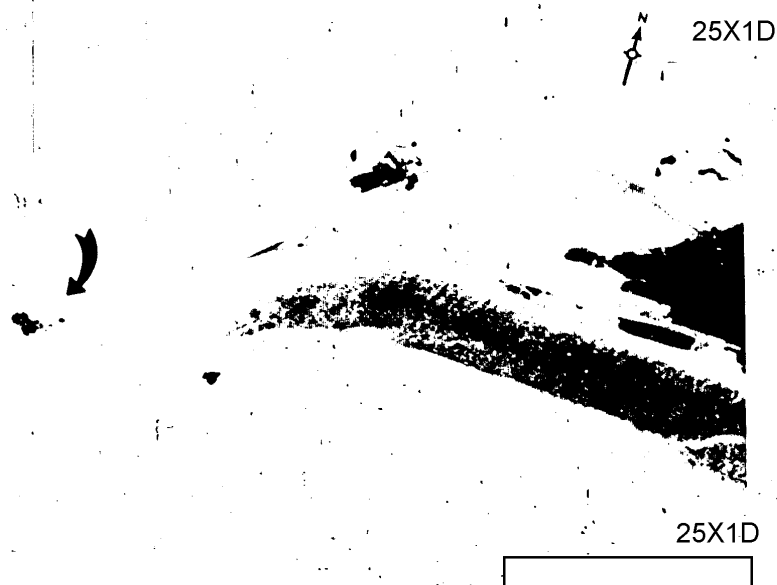


FIGURE 12. LAUNCH SITES I-9 AND J-10, UZHUR ICBM COMPLEX.

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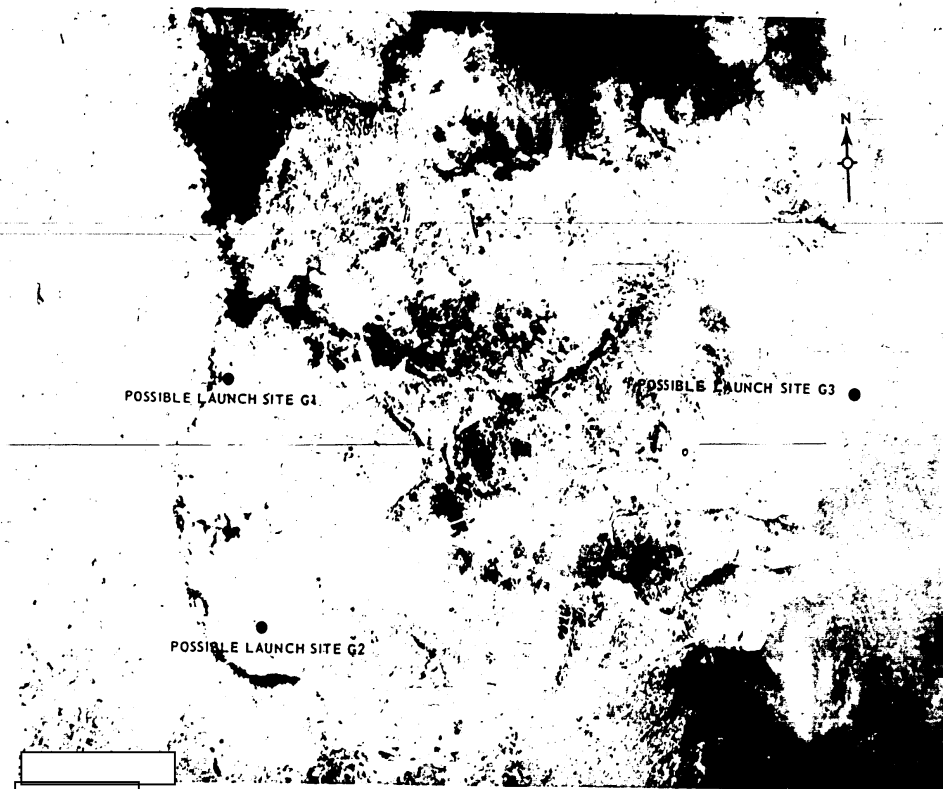
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FIGURE 14. TYPE III D LAUNCH SITES, DROVYANAYA ICBM COMPLEX.

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FIGURE 15. POSSIBLE LAUNCH SITES G1, G2, AND G3, POSSIBLE LAUNCH GROUP G, GLADKAYA ICBM COMPLEX.

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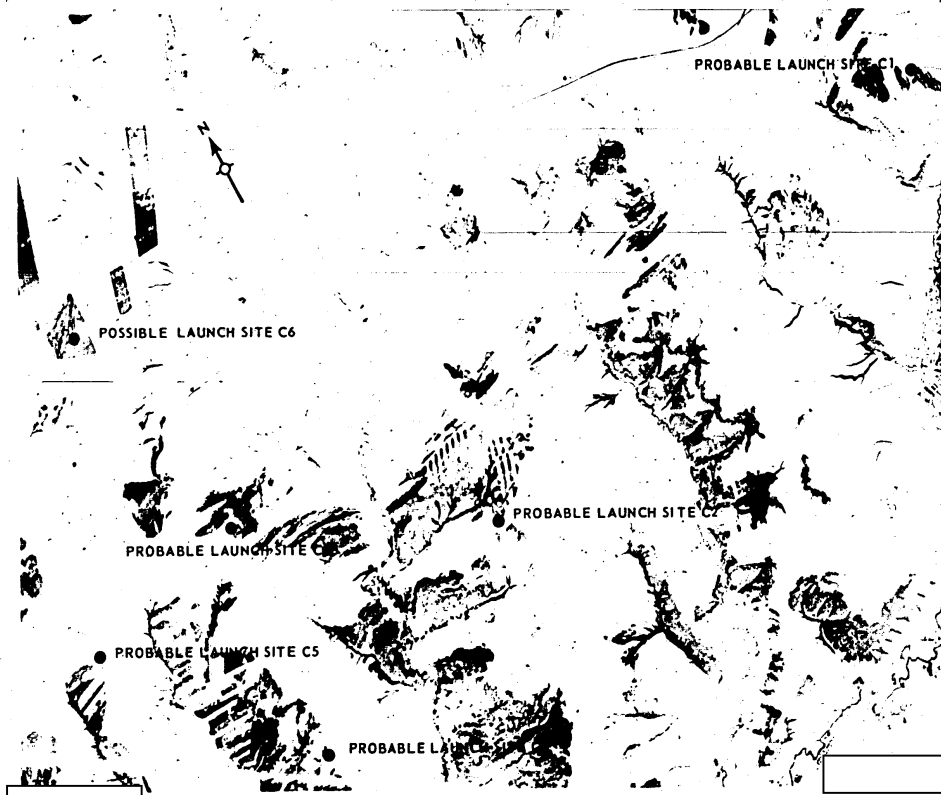


FIGURE 16. PROBABLE LAUNCH GROUP C(25-29), TATISHCHEVO ICBM COMPLEX.

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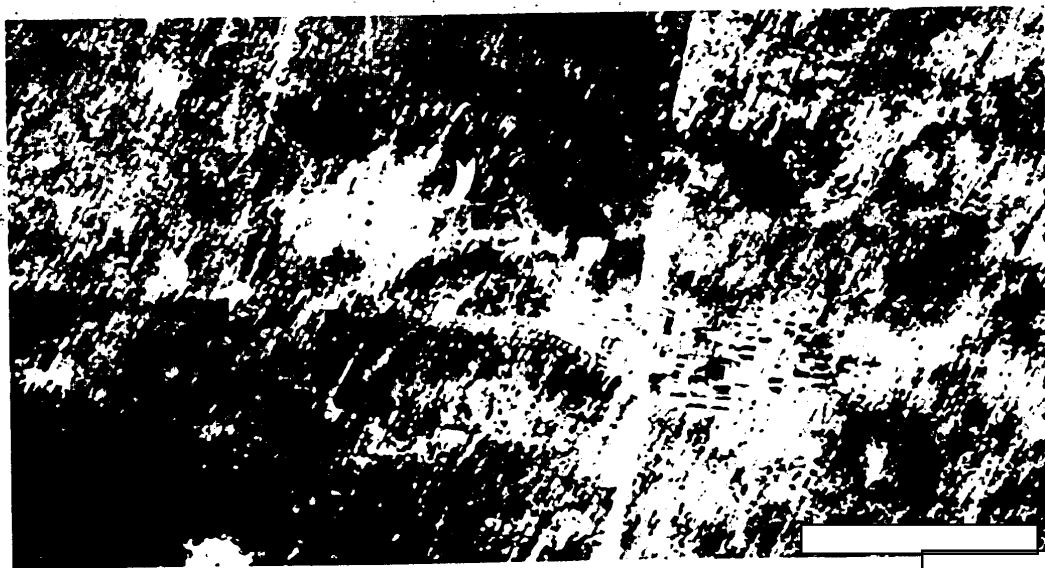


FIGURE 19. LAUNCH SITE C-31, NOVOSIBIRSK ICBM COMPLEX.

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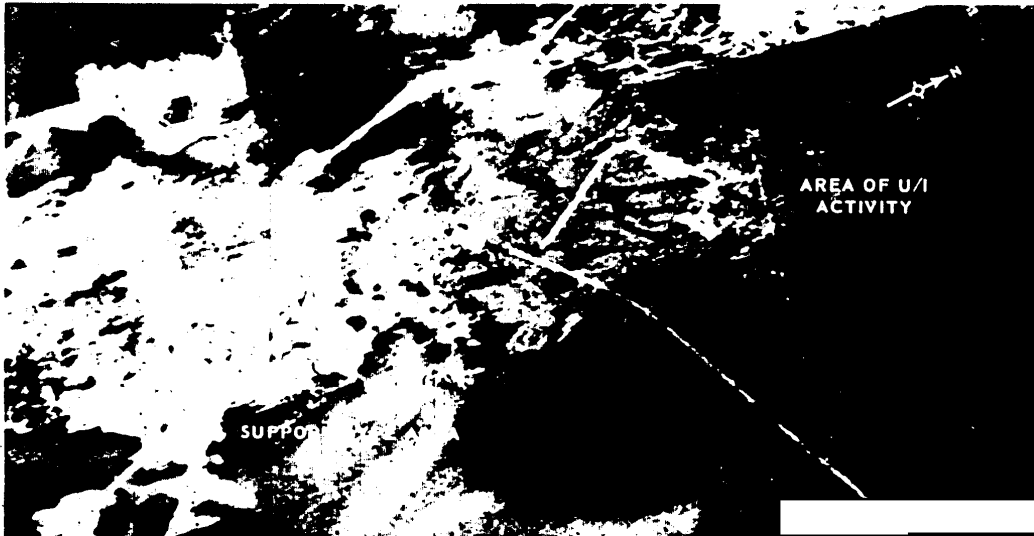


FIGURE 20. SUSPECT NEW LAUNCH SITE, PLESETSK ICBM COMPLEX.

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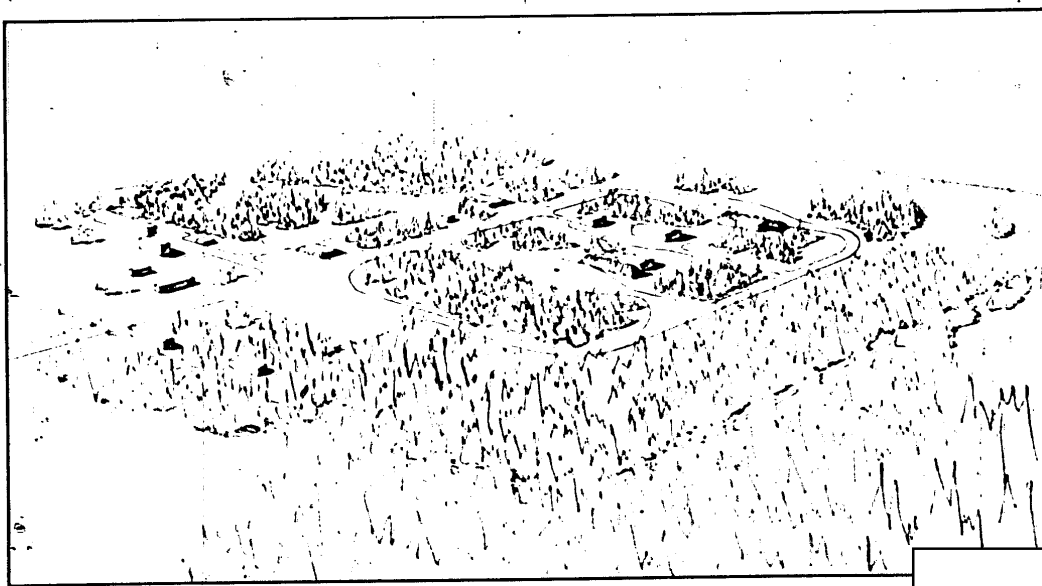
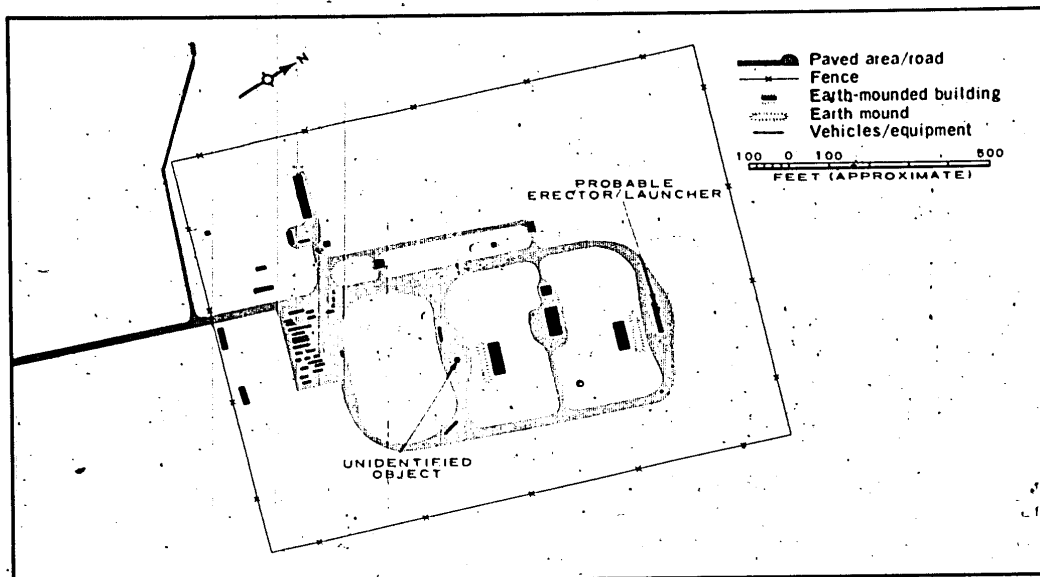
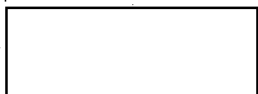


FIGURE 22. LAUNCH SITE F, PLESETSK ICBM COMPLEX.

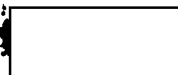
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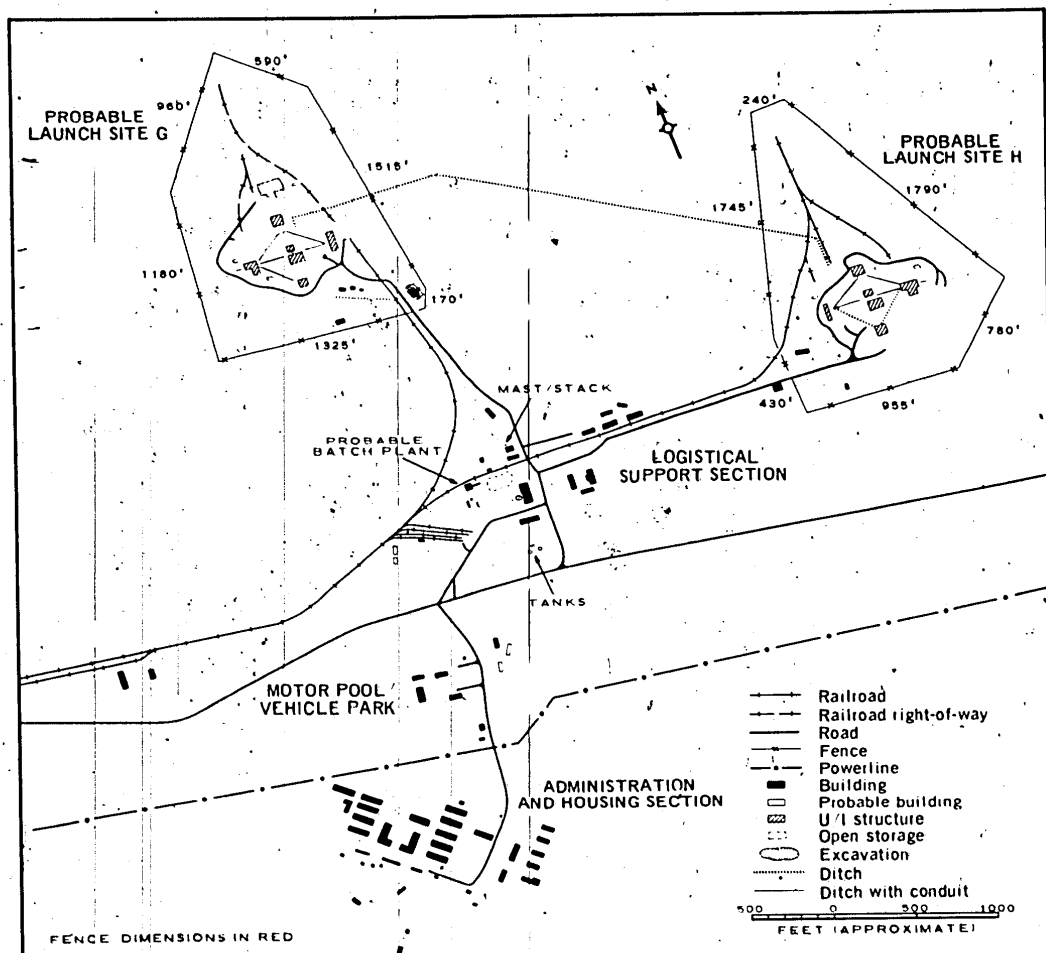
FIGURE 23. PROBABLE LAUNCH SITES (9) AND (10), PLESETSK ICBM COMPLEX.



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PROBABLE LAUNCH SITE G	PROBABLE LAUNCH SITE H	ADMINISTRATION AND HOUSING SECTION	LOGISTICAL SUPPORT SECTION
Probable site orientation 25X1D	Probable site orientation 25X1D	2 L-shaped buildings 145 x 85	1 building 145 x 50
1 U/I structure 140 x 50	1 U/I structure 140 x 45	1 building 145 x 35	1 building 130 x 25
1 U/I structure 120 x 80	1 U/I structure 110 x 60	1 building 140 x 30	1 building 125 x 30
1 U/I structure 115 x 60	1 U/I structure 105 x 90	1 building 140 x 25	1 building 110 x 30
1 U/I structure 105 x 80	1 U/I structure 85 x 75	10 buildings 135 x 30	1 building 100 x 25
1 U/I structure 80 x 55	1 U/I structure 80 x 80	1 building 120 x 35	1 building 85 x 30
1 U/I structure 75 x 45	1 U/I structure 75 x 45	1 building 95 x 35	1 building 70 x 40
1 building 45 x 35		4 buildings 85 x 30	1 building 60 x 20

FIGURE 24. LAYOUT OF PROBABLE LAUNCH SITES G 91 AND H 101, PLESETSK ICBM COMPLEX.

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FIGURE 28. PROBABLE ERECTED MISSILE ON PAD C1, LAUNCH COMPLEX C(3), TYURATAM

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FIGURE 29. PROBABLE MISSILE DOLLY AT PAD H1, LAUNCH COMPLEX H-8, TYURATAM. []

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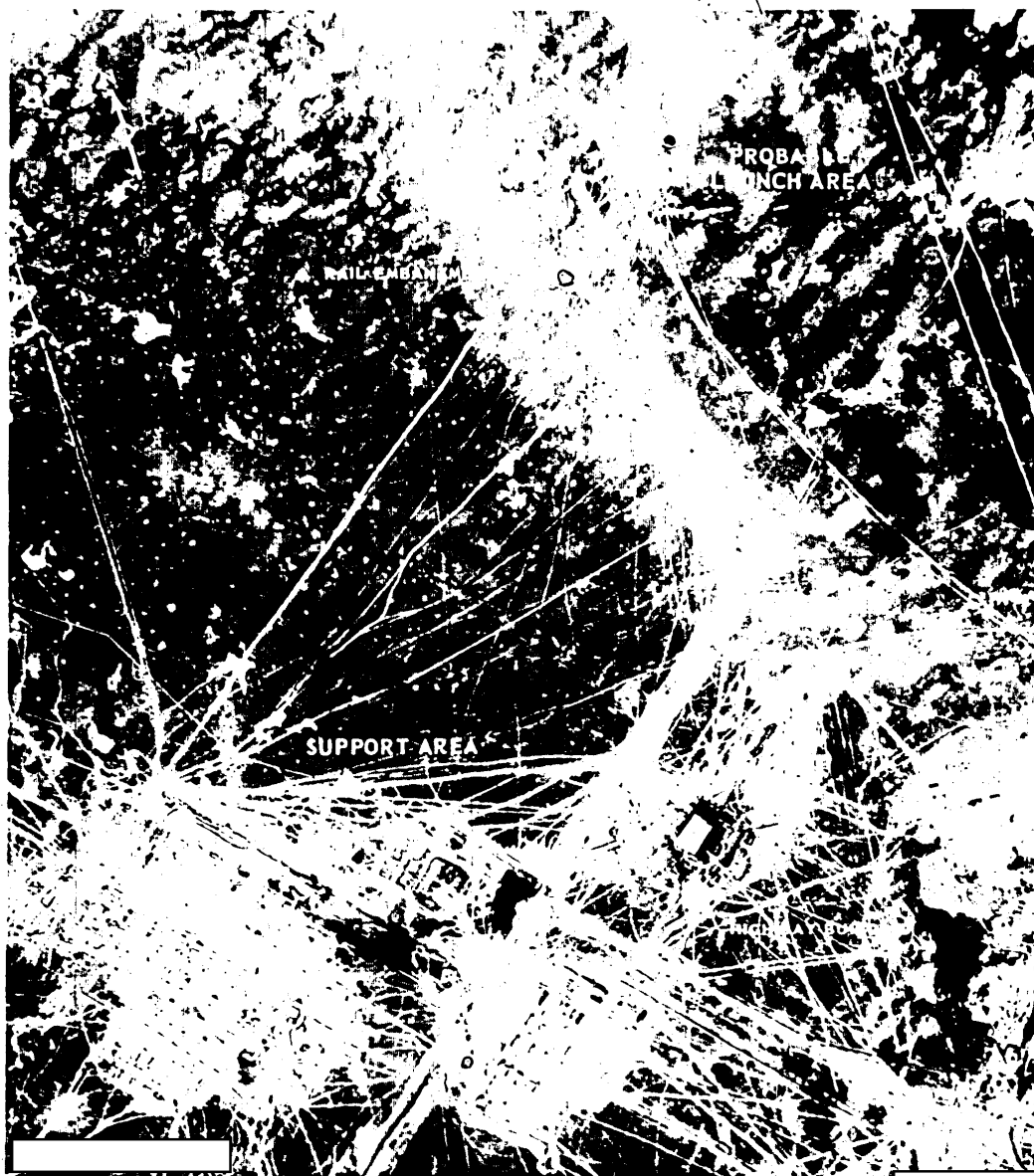


FIGURE 30. LAUNCH COMPLEX J, TYURATAM.

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